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| DARBY & DARBY P.C. | | | EXAMINER | |
| P.O. BOX 770 | | | OLANIRAN, FATIMAT O | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|---------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/797,361 | NAKAMICHI ET AL. |
| | Examiner Fatimat O. Olaniran | Art Unit 2609 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-8 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 09 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. _____.
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date All. 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to because of the following informalities: Preamble, "The speaker apparatus...comprising" should be changed to --further comprising-- Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Ariga et al (4408095).

Claim 6 Ariga discloses a speaker apparatus, comprising:

an L channel speaker unit which produces an L channel signal (col. 1 line 34-36); an R channel speaker unit which produces an R channel signal (col. 1 line 37-39); a center speaker unit (col. 1 line 40-42), which is placed between said L channel speaker unit and said R channel speaker unit (FIGURE) and which produces a -L channel signal and -R channel signal (col. 2 line 2-6 and line 15-16).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Carlsson (4006311).

Claim 1 Yoshida discloses, a speaker apparatus for mounting in an automobile (col. 2 line 49), comprising, an L channel speaker unit placed forward of a driver seat and a passenger seat of the automobile (col. 2 line 50-51) having:

a horizontal vibration axis is in a direction pivoted counterclockwise from a forward direction of motion of said automobile (Fig. 2), and

a vertical vibration axis in the direction of motion of said automobile (Fig. 2)

an R channel speaker unit placed forward of the driver seat and the passenger seat of the automobile having (col. 2 line 50-51);

a horizontal vibration axis in a direction pivoted clockwise from the forward direction of motion of said automobile (Fig. 2) and

a vertical vibration axis in the direction of motion of said automobile (Fig. 2)

Yoshida does not disclose the vertical vibration axis is directed at an incline of a prescribed angle.

Carlsson discloses the vertical vibration axis is directed at an incline of a prescribed angle (Fig. 2, Fig. 6). Therefore it would be obvious to one ordinarily skilled in the art at

the time the invention was made to modify the speakers of Yoshida with the inclination of Carlsson so as to be able to direct sound waves in an automobile.

6. Claims 2-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Carlsson (4006311) in further view of Ariga et al (4408095).

Claim 2 analyzed with respect to claim 1, Yoshida discloses a center speaker unit disposed with said L channel speaker and R channel speaker (col. 2 line 54-55). Yoshida in view of Carlsson does not disclose and which outputs a -L - R signal in which a -L signal, which is a reverse phase signal of, said L channel signal is added to a -R signal which is a reverse phase signal of said R channel signal.

Ariga discloses and which outputs a -L - R signal in which a -L signal which is a reverse phase signal of said L channel signal is added to a -R signal which is a reverse phase signal of said R channel signal (FIGURE, col. 2 line 2-6 and line 15-16).

Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify Yoshida's central speaker in view of Carlsson with the phase inverting circuitry of Ariga in order to extract the low frequency components as taught by Ariga, (col. 1line 40-42).

Claim 3 analyzed with respect to claim 2 and claim 1. Yoshida discloses said center speaker unit (col. 2 line 54-55) and front glass of automobile (inherent). Yoshida does

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not disclose is placed so that a line extending from a vertical vibration axis thereof intersects.

Carlsson discloses, is placed so that a line extending from a vertical vibration axis thereof intersects (Fig. 2 col. 5 line 2-4). Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker in a car of Yoshida with the incline of Carlsson in order to have a speaker that will generate sound waves that will be reflected against the surface towards which the speaker is inclined.

Claim 5 analyzed with respect to claim 3, claim 2 and claim 1, Yoshida discloses a center channel vertical vibration axis (inherent). Yoshida does not disclose vertical vibration axis is inclined.

Carlsson discloses axis is inclined (abstract line 4-7, Fig. 2). Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speakers of Yoshida with the inclination of Carlsson so as to be able to direct sound waves.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Carlsson (4006311) in further view of Ariga et al (4408095) in further view of Goldfarb (5764777).

Claim 4 analyzed with respect to claim 2 and claim 1, Yoshida in view of Carlsson and Ariga does not disclose a subwoofer disposed separate from said center speaker unit, said L channel speaker and said R channel speaker, which outputs a L+R signal.

Goldfarb discloses a subwoofer disposed separate from said center speaker unit (col. 9 line 67, col. 10 line 1-2), said L channel speaker and said R channel speaker, which outputs a L+R signal (col. 10 line 7-13). Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify Yoshida's speaker system in view of Carlsson and Ariga with the subwoofer of Goldberg in order to have an amplifier dedicated to the output of bass audio frequencies.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847).

Claim 6 Yoshida discloses an L channel speaker unit which produces an L channel signal (Fig. 1, col. 2 line 53-54) an R channel speaker unit which produces an R channel signal (Fig. 1, col. 2 line 53-54); a center speaker unit (Fig. 1, col. 2 line 54-55), which is placed between said L channel speaker unit and said R channel speaker unit (Fig. 2) and which produces a -L channel signal and -R channel signal (Fig. 1, col. 2 line 53-54) Yoshida does not explicitly disclose which produces "a -L channel signal and -R channel signal". However Yoshida discloses, " phase inversion speakers" (col. 3 line 50-52). Therefore it would be obvious that Yoshida's phase inversion central speaker can produce -L and -R channel signals.

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9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (5854847) in view of Carlsson (4006311).

Claim 7 analyzed with respect to claim 6, Yoshida discloses a horizontal vibration axis of said L channel speaker unit is pivoted counterclockwise from a forward direction of motion of said automobile (Fig. 2)

a vertical vibration axis of said L channel speaker unit in the direction of motion of said automobile (Fig. 2)

a horizontal vibration axis of said R channel speaker unit is pivoted clockwise from the forward direction of motion of said automobile (Fig. 2); and

vertical vibration axis of said R channel speaker unit in the direction of motion of said automobile (Fig. 2)

wherein said L channel speaker unit, said R channel speaker unit, and said center speaker unit are placed forward of a driver seat and a passenger seat of an automobile (Fig. 2). Yoshida does not disclose the vertical vibration axis is directed at an incline of a prescribed angle.

Carlsson discloses the vertical vibration axis is directed at an incline of a prescribed angle (Fig. 2 col. 5 line 2-4). Therefore it would be obvious to one ordinarily skilled in the art at the time the invention was made to modify the speaker system of Yoshida with the angle inclination of Carlsson in order to direct sounds in an automobile.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fatimat O. Olaniran whose telephone number is 571-270-3437. The examiner can normally be reached on M-F Alt F off 9:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Tran can be reached on 571-272-7305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO



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PRIMARY EXAMINER